

CLAIMSWhat is claimed is:

1. A method of processing an alarm within a process control system, the method comprising the steps of:

5 receiving a device alarm message from a field device, wherein the device alarm message has a first set of message fields including a first set of device information;

appending a second set of message fields containing a second set of device information associated with the field device to the device alarm message to form an enhanced device alarm message;

10 selecting a device alarm table based on the second set of device information within the enhanced device alarm message; and

mapping the first set of device information within the enhanced device alarm message to the selected device alarm table to identify a set of information fields containing displayable alarm information.

2. The method of claim 1, wherein the step of receiving the device alarm message from the field device includes the step of receiving a Fieldbus alarm message.

3. The method of claim 1, wherein the step of receiving the device alarm message from the field device includes the step of receiving a device alarm message including one of a block identification field, a relative identification field and a subcode field.

4. The method of claim 1, wherein the step of appending the second set of message fields containing the second set of device information to the device alarm message includes the step of appending a message field containing one of manufacturer information, device type information and revision level information.

5. The method of claim 1, wherein the step of selecting the device alarm table based on the second set of device information within the enhanced device alarm message includes the step of selecting the device alarm table from a plurality of device alarm tables, wherein each of the device alarm tables is associated with a particular set of device information.

6. The method of claim 1, wherein the step of mapping the first set of device information within the enhanced device alarm message to the device alarm table to identify the set of information fields containing displayable alarm information includes the step of determining whether the first set of device information matches a third set of device information within the device alarm table.

7. The method of claim 1, wherein the step of mapping the first set of device information within the enhanced device alarm message to the device alarm table to identify the set of information fields containing displayable alarm information includes the step of identifying a set of information fields containing one of corrective action information, alarm message information, alarm type information, alarm description information and alarm parameter information.

8. The method of claim 1, wherein the step of selecting the device alarm table includes the step of selecting the device alarm table based on a preferred language.

9. The method of claim 1, further comprising the step of displaying a portion of the displayable alarm information.

10. The method of claim 9, wherein the step of displaying the portion of the displayable alarm information includes the step of displaying one of an alarm parameter, an alarm description, an alarm type, an alarm message and corrective action information.

11. The method of claim 9, wherein the step of displaying the portion of the displayable alarm information includes the step of displaying a floating point numeric value from one of the first set of message fields in response to a predetermined character string within one of the set of information fields containing displayable
5 alarm information.

12. A system for processing an alarm within a process control network having a field device, the system comprising:
a processor system communicatively coupled to a memory, wherein the
10 processor system is programmed to receive a device alarm message from the field device, wherein the device alarm message has a first set of message fields including a first set of device information, wherein the processor system is further programmed to append a second set of message fields containing a second set of device information associated with the field device to the device alarm message to form an enhanced
15 device alarm message and to select a device alarm table based on the second set of device information within the enhanced device alarm message and wherein the processor system is programmed to map the first set of device information within the enhanced device alarm message to the selected device alarm table to identify a set of information fields containing displayable alarm information.

20 13. The system of claim 12, wherein the device alarm message has a Fieldbus alarm message format.

14. The system of claim 12, wherein the device alarm message includes one of a block identification field, a relative identification field and a subcode field.

25 15. The system of claim 12, wherein the second set of message fields includes one of manufacturer information, device type information and revision level information.

16. The system of claim 12, wherein the processor system is further programmed to map the first set of device information within the enhanced device alarm message to the device alarm table to identify the set of information fields containing displayable alarm information based on a comparison of the first set of device information to a third set of device information within the device alarm table.

17. The system of claim 12, wherein the processor system is further programmed to map the first set of device information within the enhanced device alarm message to the device alarm table to identify the set of information fields containing displayable alarm information by identifying a set of information fields containing one of corrective action information, alarm message information, alarm type information, alarm description information and alarm parameter information.

18. The system of claim 12, wherein the processor system is further programmed to select the device alarm table based on a preferred language.

19. The system of claim 12, wherein the processor system is further programmed to display one of an alarm parameter, an alarm description, an alarm type, an alarm message and corrective action information.

20. The system of claim 12, wherein the processor system is further programmed to display a floating point numeric value from one of the first set of message fields in response to a predetermined character string within one of the set of information fields containing displayable alarm information.

21. The system of claim 12, wherein the processor system includes a first processor that appends the second set of message fields to the device alarm message and a second processor that maps the first set of device information within the enhanced device alarm message to the selected device alarm table.

22. A system for processing alarms within a process control network, the system comprising:

a computer readable medium;

5 a first routine stored on the computer readable medium and adapted to be executed by a processor system that receives a device alarm message from a field device, wherein the device alarm message has a first set of message fields including a first set of device information;

10 a second routine stored on the computer readable medium and adapted to be executed by the processor system that appends a second set of message fields containing a second set of device information associated with the field device to the device alarm message to form an enhanced device alarm message;

a third routine stored on the computer readable medium and adapted to be executed by the processor system that selects a device alarm table based on the second set of device information within the enhanced device alarm message; and

15 a fourth routine stored on the computer readable medium and adapted to be executed by the processor system that maps the first set of device information within the enhanced device alarm message to the selected device alarm table to identify a set of information fields containing displayable alarm information.

20 23. The system of claim 22, wherein the device alarm message has a Fieldbus alarm message format.

24. The system of claim 22, wherein second routine is further adapted to append a message field containing one of manufacturer information, device type information and revision level information to the device alarm message.

25 25. The system of claim 22, wherein the third routine is further adapted to select the device alarm table based on a preferred language.

26. The system of claim 22, wherein the fourth routine is further adapted to determine whether the first set of device information matches a third set of device information within the device alarm table.

5 27. The system of claim 22, further comprising a fifth routine stored on the computer readable medium and adapted to be executed by the processor system that displays one of an alarm parameter, an alarm description, an alarm type, an alarm message and corrective action information.

10 28. The system of claim 22, wherein the fifth routine is further adapted to display a floating point numeric value from one of the first set of message fields in response to a predetermined character string within one of the set of information fields containing displayable alarm information.

15 29. The system of claim 22, wherein the computer readable medium includes first and second memories and wherein the second routine is stored on the first memory of the computer readable medium and the fourth routine is stored on the second memory of the computer readable medium.

30. A system for processing a device alarm within a process control network having a field device, the system comprising:

20 a processor system communicatively coupled to a memory, wherein the processor system is programmed to receive a device alarm message from the field device, wherein the device alarm message has a first set of device information stored within the field device, and wherein the processor system is further programmed to append a second set of device information associated with the field device to the device alarm message to form an extended device alarm message and to use the first
25 set of device information within the extended device alarm message to identify a set displayable alarm information.

31. The system of claim 30, wherein the device alarm message has a Fieldbus alarm message format.

5 32. The system of claim 30, wherein the second set of device information includes one of manufacturer information, device type information and revision level information.

10 33. The system of claim 30, wherein the processor system is further programmed to use the first set of device information within the extended device alarm message to identify the set of displayable alarm information based on a comparison of the first set of device information to a third set of device information.

15 34. The system of claim 30, wherein the processor system is further programmed to use the first set of device information within the extended device alarm message to identify the set of displayable alarm information from a set of information fields containing one of corrective action information, alarm message information, alarm type information, alarm description information and alarm parameter information.

35. The system of claim 30, wherein the processor system is further programmed to display one of an alarm parameter, an alarm description, an alarm type, an alarm message and corrective action information.

20 36. The system of claim 30, wherein the processor system is further programmed to display a floating point numeric value from the first set of device information in response to a predetermined character string.

25 37. The system of claim 36, wherein the predetermined character string is "%V."

38. The system of claim 30, wherein the processor system includes a first processor that appends the second set of device information to the device alarm message and a second processor that uses the first set of device information to identify the set of displayable alarm information.

5

F06T40"041901